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USER MANUAL FOR THE LAB INFORMATION SYSTEM (LIS) DORSET RESEARCH CENTRE

A.Nicolls, B.A.Locke and S.A.McCormick

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DATA REPORT DR 86/2

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DATA REPORT SERIES

The data presented in this report were collected by staff of the Water Resources Branch of the Ontario Ministry of the Environment as part of the Lakeshore Capacity Study or the Acid Precipitation in Ontario Study. This unreviewed report does not necessarily reflect the views or opinions of the Ontario Ministry of the Environment.

USER MANUAL

FOR THE

LAB INFORMATION SYSTEM (LIS)

Dorset Research Centre

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Data Report DR 86/2

PREFACE

The unpublished Data Report Series is intended as a readily available source of basic data collected for lakes and watersheds in the Muskoka-Haliburton area of Ontario. These data were collected as part of the Lakeshore Capacity Study and/or the Acid Precipitation in Ontario Study.

The limnological portion of the Lakeshore Capacity Study (1975-81) was initiated to investigate the relationships between lakeshore development and lake trophic status in low ionic strength Precambrian lakes. The Acid Precipitation in Ontario Study (1979-present) was initiated, in part, to investigate the effects of the deposition of strong acids on aquatic and terrestrial ecosystems in Ontario. The primary findings of these studies have been and will continue to be published as reviewed papers and technical reports.

ABSTRACT

This report outlines the procedures used by the Limnology Unit of the Dorset Research Centre to submit samples to the Lab Information System (LIS).

Nicolls, A., B.A. Locke and S.A. McCormick. 1986. User Manual for the Lab Information System (LIS). Dorset Research Centre. Data Report DR 86/2.

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Methodology Update for LIS Sample Submission

1. Introduction

This manual is intended for use by all groups submitting samples for chemical analysis at the Dorset Research Centre. The procedures to enter sample identification, analytical results and any other pertinent information are summarized in this report. Updating procedures are continual, and this manual will be revised on a regular schedule.

Updated: 84/11/08, 85/11/12, 86/03/17

Inquiries and requests should be directed to:

Shirley McCormick (also for Submission forms and Request for Analysis forms)
Barbara A. Locke
Al Nicolls
Peter Sutey (Lab queries)

2. Submission Form (MOE 0951 3/80):

. A copy of the submission form is shown in Figure 1.

. A unique submission number is pre-printed on each page. This number will identify each individual submission from all others.

. The two boxes for field sample number should contain the first and last number in the submission whenever possible to aid in the processing of samples in the Toronto lab.

. Page listings should include 1 to the last page number, with the submission form numbered as page 1 (one), and the request for analysis forms numbered sequentially.

. The appropriate programme code should be filled in (see Table 1).

. The Lab is "DO" (as of 85/11/01) and the Priority is "N". Field data type should be left blank if there is no field data to be entered on the request for analysis forms. If field data exists, enter one of the field data types as listed on page 2.

. Sampling agency codes are listed in Table 2.

. The date submitted is daily and is written in day/month/year format.

. Be sure to fill in "sampled by" with surname and initial (or just initials).

. "Report to" information:

a) Routine Limnology: put "WR022" under "client code 1" and "B. Locke" under "report to (name)". This will automatically provide copies for Barb Locke, Al Nicolls, and Frank Tomassini (required).

b) Non-routine Limnology: if you have a client code, put it under "client code 1" and your surname and initial under "report to". This will automatically provide a copy for Al Nicolls. If you do not have a client code, fill out name, address, etc., in full beside "client code 1". To ensure that Al Nicolls receives a copy of every submission, be sure to put "WR021" under "client code 2".

- For additional copies, fill out the next client field with either a client code plus surname, or surname plus full address where no client code exists for the person. NOTE: 5 (five) copies is the maximum. Keep this in mind when using WR021 or WR022 and if requesting additional copies.

3. 'Request for Analysis Form'

- Samples of the four types of request for analysis forms are shown in Figures 2, 3, 4, and 5. Each one has a different field data type as follows: D1 - lakes
  D2 - streams
  D3 - precipitation
  D4 - lake profiles
  The current field data type 'LI' is being phased out over the next few months.

- The submission number should be written on each sheet as it appears on the submission form.

- The page should be numbered as it falls in the total submission, (e.g. 3 of 7).

- The field sample number should be in the consecutive correlation number series unique for each sample category, if applicable (see Table 2).

- The lab 'type' is "PR" for precipitation, "R" for lakes and streams, and "LP" for lake profile samples. (For any other types leave the field blank, but include in the description what the sample is, such as fish tissue or sediment).

- Con. Sent denotes the total number of sample containers shipped with the same field sample number to both the Dorset and Toronto labs.

- Sample date is listed in year/month/day format.

- Time is written in 24-hour clock format, with a 0 (zero) preceding the time from midnight to noon (eg. 0835). Midnight is entered as 2400 and not 0000. Ensure that the time entered is accurate at least to the nearest 30 min. for meaningful data analysis and intercomparison, and that it corresponds to that in the field notes. Be sure that the times for epi, meta, hypo and euph samples correspond. When doing replicates, different times can be used for each water layer if required.

- Sample location/station I.D. is a unique 11 (eleven) digit number for each station. Routine Limnology numbers for lakes, A and Export streams, multistation streams and precipitation are listed in Table 3. A more complete list is available from Barb Locke or Al Nicolls. Other user groups submitting samples taken from routinely monitored sample locations should also use these station I.D. numbers providing methodology and quality assurance are at Ministry standards. Care should also be taken when using routine station I.D. numbers that the samples are representative of naturally occurring water conditions at station specified sites, and are not the result of experimentally altered states or laboratory assays.

  Use abbreviations whenever possible. Where no valid station I.D. number exists, leave field blank, or use the 11-digit 'dummy' numbers (99's), i.e.:

  99999999999 = general purpose dummy station;
  99999999901 = dummy lake station;
  99999999902 = dummy stream station; and
  99999999923 = dummy precip station.

- Station numbers may be assigned on request for routine or non-routine work (see Al Nicolls). If planning on extensive sampling, please have numbers assigned before sampling begins.

- Sample location description should be printed neatly for ease of identification on LIS printouts. Use abbreviations whenever possible. If no station number exists, be sure to include some identifying information for the sampling location.

- Use the sample description field when necessary to enhance a field condition code (see below) or to notify the lab of unusual conditions which may affect the sample. Otherwise, leave this field blank.

- Test groups routinely used by the Dorset Research Centre are listed in Table 4. Where there are deletions from or additions to a test group or individual tests to be requested, they should be listed under parameters with a plus sign for additions and a minus sign for deletions in the appropriate LIS parameter code format (see Table 5).

- Field Data should be entered whenever a valid station identifier number is used, when applicable. Field Data codes for Lakes, Streams and Precipitation are listed in Table 6.

- Ensure that condition code is entered where applicable (see Table 6). Add additional information for which there is no appropriate condition code under sample description (see above). If you see a need for a new condition code, discuss with Bruce LaZerte or Al Nicolls.

- Please use only request for analysis forms mentioned above for routine analysis (i.e. do not use any pre-printed for other groups unless required for special use). See Shirley McCormick for a particular request for analysis form.

- If secchi depth is determined, it should be entered with the euphotic zone sample (water layer = 5).

4. LIS Procedure for Submitting Replicates (for Quality Control purposes)

- Sample type 01 is to be used for Quality Control replicates.

- Be sure that at least 2 (two) replicates are done for any sample, as the regular sample will not be included with the QC data.

- Enter tests to be replicated with the specific replicate samples.

- Enter the sample information for each replicate as for the regular samples (indicating time, date, etc.) except for field data.

- Enter only the following field data for replicates:

  1) field condition code (as for a regular sample, unless different)
  2) sample type for QC replicates (01)
  3) (lakes' samples only:) add sample depth and water layer.

5. Field Data Groups (D1 through D4)

- There are four request for analysis forms for the following field data types:

lakes	(D1)
streams	(D2)
precipitation	(D3)
lake profiles	(D4)

- The field data groups were designed specific to each sample type. The order of entry has been changed, and in some cases new fields have been created and old fields have been modified. The following list itemizes changes in field data entry. Please be thorough when entering field data (see Table 6).

D1 - Lakes

(i) sample type 11, 12, or 01.
(ii) condition code (be sure to include sampler type in rightmost position).
(iii) water layer (note: if a grab sample, type 11, please enter layer '8').
(iv) sample (top) depth.
(v) bottom depth (omit if grab sample, type 11); *NOTE: there is no longer a 'depth interval' field. Instead, enter the 'bottom depth' of the layer. Example: meta is 6 to 12 m, Zmax is 18. Sample depth = 6; bottom depth = 12; water depth = 18.
(vi) water depth (= Zmax).
(vii) secchi depth (for euph, layer 5, only).
(viii) water temp (optional).

D2 - Streams

- (i) water temp °C
- (ii) condition code; *NOTE: now mandatory for each stream sample (see Table 6). Be sure to include hydrological condition code in right-justified position.
- (iii) max temp °C
- (iv) min temp °C
- (v) sample type (11 or 01)
- (vi) sample depth (only if required)

D3 - Precipitation

- (i) sample type (61, 62, 63, or 01)
- (ii) cond code (be sure to include collector type in rightmost position)
- (iii) initial date (year/month/day)
- (iv) initial time
- (v) precip depth/gauge: (was formerly entered in "water depth" field). Be sure to include gauge code in the 2nd decimal position.
- (vi) sample volume

D4 - Lake Profiles. *This is a new type of data being entered to the Sample Information System (SIS). Please note that new sample type for lake profiles is 10.

- (i) water depth (entered only once in top line. Will be entered with the first sample only.)
- (ii) sample depth (ie. 1, 1.5, 2, etc. Each depth will be given a sample number, 1 through n.)
- (iii) condition code (be sure to include sampler type in rightmost position)
- (iv) sample type (10 or 01)
- (v) temperature °C
- (vi) light - "D" downwelling light in µ einstn/m^2/sec
- (vii) light - "R" reference light in µ einstn/m^2/sec
- (viii) light - "U" upwelling light in µ einstn/m^2/sec

6. Additional Notes

. Submission summaries must be kept for confirmation of data and, more importantly, for missing submission searches or corrections. The submission number, date submitted, and correlation number series must be quoted for this procedure to be effective. All other pertinent information, both field and shipping, must be available for cross-reference to ensure that accurate data analysis and retrieval is occurring. (Periodically, copies of this information will be requested by Shirley McCormick for samples submitted with valid station I.D. number).

. Field notes should be kept with assiduous attention to detail, especially where technique or conditions vary from routine, to facilitate data trouble shooting.

. Use black or blue pen only (no pencils) on all LIS forms and print neatly and clearly. Please have another person doublecheck your request for analysis form for errors in sample ID numbers, dates, times and field data to avoid delays entering your submission. The submission form and accompanying "Request for Analysis" sheets should be submitted together that same day in one of the boxes of samples preferably by 1500 hrs in order for them to be entered.

. Samples for which some tests will be done in Toronto must be received before 1500 hrs on Thursday, in order to allow time for submission entry to be completed in Dorset. Samples received after this time will be sent to Toronto on the following Friday. (Weekly shipments of bottles to Toronto are accompanied with a computer tape containing the week's LIS submission information).

. For composite lake samples, please note that the procedure of entering sample depths and intervals has been changed. In the past, the depth interval was calculated for each layer. The top and bottom depth are now entered directly (see section on field data group D1 .

. For grab samples (for example, type 10 or 11) a depth of zero is invalid. Use a real depth, eg. 0.1 or 0.2.

Table 1. Valid Program Codes

	Project	Responsibility	Name
01013	APIOS Water (Task #2)		
0101303--	MNR Lake Studies	OMNR	
04--	Neutralization	Booth Aquatic Research	
11--	CE Region	Central Region OME	
12--	NE Region	Northeast Region OME	
13--	NW Region	Northwest Region OME	
18--	Taxonomy	Taxonomy Unit, WRB	
0101320	Routine Limnology	Limnology Unit, WRB	
01	A Lakes		Ron Reid
02	A Streams		Lem Scott
03	Export Streams		Lem Scott
21--	Multistation Streams		Ron Reid
22--	B Lakes		Ron Reid
23--	Sudbury Lakes		Ron Reid
24--	Survey Lakes		R. Reid/J. Scholer
25	Precipitation		Lem Scott
01	Routine		
02	Snow Courses		
26--	Sediments		Jane Scholer
27--	Biota		Norm Yan
28--	Speciation Studies		Bruce LaZerte
29--	Processes		Greg Mierle
30	MOE/MNR Study		Ron Reid
01	Algonquin		
02	Haliburton		
31	Bioassays		
01	Field (Benthos)		Ron Hall
02	Laboratory (Benthos		Ron Hall
03	Fish Toxicity-Field		John Munro
04	Fish Toxicity-Lab		Keith Holtze
32--	Event Sampling		Lem Scott
34	External-Limnology	Limnology Unit, WRB	
01	General		Al Nicolls
02	H. Harvey		
03	P. Stockes		
04	M. Berrill, B. Pollard		
05	G. Mackie, M. Shaw		
06	Trent-P. Adams, C. Allan		
07	G. Nurnberg		
08	D. Evans		
09	B. Goodison		
10	N.D. Yan (School)		
11	J. Hoeniger (U. of T.)		
12	C. Metcalfe (B. Gibson-Trent)		

Note: --denotes that positions should be left blank

Table 2. Sampling Agency Codes

0102010401	Limnology + Toxicity (Aquatic Ecosystems Section)
02010302	Natural Resources

Correlation Number Series: (Routine Limnology)

10000-19999	Special study streams
20000-29999	Lakes (chemistry)
30000-39999	Streams
40000-44999	Precipitation (routine)
45000-49999	On-Ground snow chemistry
50000-59999	Lakes (chlorophyll)
60000-69999	Lakes (trace metals)

Table 3. Station identification codes and standard abbreviation

---

Lakes: (last 2 digits of code right justified are 01)

	Lake	Abbrev	Stn I.D.		Lake	Abbrev	Stn I.D.
A:	Blue Chalk	BC	03 0077 540 01	B:	Basshaunt	BH	17 0021 520 01
	Chub	CB	03 0085 530		Bigwind	BW	03 0085 500
	Crosson	CN	03 0077 510		Buck	BK	03 0085 540
	Dickie	DE	03 0085 510		Glen	GN	17 0021 510
	Harp	HP	03 0085 570		Gullfeather	GF	03 0077 500
	Heney	HY	03 0085 505		Little Clear	LC	03 0085 590
	Plastic	PC	17 0021 540		Solitaire	SE	03 0085 600
	Red Chalk east	RCE	03 0077 521		Walker	WR	03 0085 550
	main	RCM	03 0077 520				
	Jerry	JY	03 0085 560				
Algonquin:				Sudbury:			
	Smoke	SM	03 0085 620		Nelson	NE	14 0028 530
	Westward	WD	03 0085 610		Middle	ME	14 0028 520
	Delano	DO	18 3490 550		Hannah	HH	14 0028 500
	Timberwolf	TF	18 4930 550		Lohi	LI	14 0035 510
	Louisa	LA	18 3490 510		Clearwater	CR	14 0035 500
	Bonnechere	BO	18 3490 551		Swan	SN	14 0035 520
	Big Porcupine	BP	03 0085 640		Mountaintop	MT	03 0134 500
Haliburton:				C:	Brandy	BY	03 0085 631
	Clear	CL	17 0021 530		Cinder-west	CI	03 0077 516
	Sherborne	SH	17 0021 550		-east	CIE	03 0077 517
	Kimball	KL	03 0085 638		Fawn	FN	03 0085 632
	Crown	CW	03 0085 639		Healey	HE	03 0085 633
	Nunikani	NI	17 0021 551		Leonard	LD	03 0085 634
					Leech	LH	03 0085 635
					Moot	MO	03 0085 636
					McKay	MY	03 0085 637
					Poker-west	PR	03 0077 515
					-east	PRE	03 0077 514

Precipitation: (last 2 digits of right justified code are 23)

*	PTIP	03 0085 536 23
	PCP	17 0021 540
*	PCP2	17 0021 541
	HPP	03 0085 570
*	HPP2	03 0085 571
	HYP	03 0085 505
*	HYP2	03 0085 506
	ANB	18 3490 505

*currently monitored stations

Table 3 (continued)

Streams: (last 2 digits of right justified code are 02)

Routine:

Red Chalk	1	RC1	03 0077 521 02
	2	RC2	03 0077 522
	3	RC3	03 0077 523
	4	RC4	03 0077 524
	0F	RC0	03 0077 520
Blue Chalk	1	BC1	03 0077 541
	0F	BC0	03 0077 540
Chub	1	CB1	03 0085 531
	2	CB2	03 0085 532
	0F	CB0	03 0085 530
Dickie	5	DE5	03 0085 515
	6	DE6	03 0085 516
	8	DE8	03 0085 518
	10	DE10	03 0085 520
	11	DE11	03 0085 521
	0F	DE0	03 0085 510
Heney (at weir)	0F	HY0	03 0085 505
Heney (at lake)	0F	HY0	03 0085 506
Harp	3	HP3	03 0085 573
	3a	HP3A	03 0085 578
	4	HP4	03 0085 574
	5	HP5	03 0085 575
	6	HP6	03 0085 576
	6a	HP6A	03 0085 579
	0F	HP0	03 0085 570
Crosson	1	CN1	03 0077 511
	0F	CN0	03 0077 510
Plastic	1	PC1	17 0021 541
	0F	PCP	17 0021 540
Twelve Mile S.		TWS	17 0021 504
N.		TWN	17 0021 503
Beech 1		BE1	17 0021 505
Paint Lake 1		PT1	03 0085 536

Multistation:

Paint Lake Substation:

Weir	PT 1	03	0085	536 02
1	PTO1			101
2	PTO2			102
4	4			4
5	5			5
6	6			6
7	7			7
8	8			8
9	9			9
10 (pond)	10			110 01
11	11			1 02
12	12			2
13	13			3
14	14			4
15	15			5

Plastic Lake Substation:

1 (Weir)	PC1	17 0021 541 02
2	PCO2	102
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Table 3 (continued)

Harp 4 Watershed Substation:

1 (Weir)	HP4	03 0085 574 02
2	HP02	152
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	HP10	160
11	1	1
12	2	2
13	3	3
14	4	4
15	5	5
16	6	6
17	7	7
18	8	8
19	9	9
20	HP20	170
21	1	1
22	2	2

Heney 1 and 2 Watershed Substations:

1	HY1A	03 0085 120 02
2	HY1B	03 0085 121
3	HY1C	03 0085 122
4	HY2A	03 0085 123
5	HY2B*	03 0085 124

*location not yet determined

Table 4. Test groups

Group	Parameters included
DA1	Algonquin 1 [parameters of DS1 and DALCV], ACDT, MNUT, ZNUT
DALCV	Aluminum Speciation ALNDCV, ALEXCV
DL1	Lakes Group 1 NNOTFR, NNHTFR, PPUT1, PPUT2, PPUT3, DIC, PH, ALKTI, ALKT, COLTR, COND25, NNTKUR, CAUR, MGUR, NAUR, KKUR, FFIDUR, CLIDUR, SSO4UR, SIO3UR, DOC, FEUT, MNUT, ALUT, ALKT3
DL2	Lakes Group 2 CHLRAC, CHLRBT, CHLRAT
DLP	Lakes Profiles DO, DIC, PH
DM1	Metals Group 1 ZNUT, PBUT, CDUT
DM2	Metals Group 2 CDUT, CUUT, NIUT, PBUT, ZNUT
DP1	Precipitation Group 1 NNOTFR, NNHTFR, PPUT1, PPUT2, COND25, PH, ALKTI, ALKT, ACDT, CAUR, MGUR, NAUR, FFIDUR, CLIDUR, SSO4UR, SIO3UR, DOC, NNTKUR, FEUT, MNUT, CUUT, NIUT, ALUT, PBUT, KKUR, ALKT3, CDUT, ZNUT
DS1	Streams Group 1 NNOTFR, NNHTFR, PPUT1, PPUT2, DIC, DO, PH, ALKTI, ALKT, COLTR, COND25, NNTKUR, CAUR, MGUR, NAUR, KKUR, FFIDUR, CLIDUR, SSO4UR, SIO3UR, FEUT, MNUT, ALUT, DOC, ALKT3
DS2	Streams Group 2 SSO4UR, SIO3UR, ALUT, ALNDCV, ALEXCV, FEUT, MNUT, ALKT3, COLTR, COND25, NNTKUR, CAUR, MGUR, KKUR, NAUR, FFIDUR, CLIDUR, NNOTFR, NNHTFR, PPUT1, PPUT2, DIC, DOC, PH, ALKT, ALKTI
DS3	Streams Group 3 NAUR, KKUR, COND25, SIO3UR, CLIDUR, SSO4UR, DIC, DOC, NNOTFR, NNHTFR, NNTKUR, PH, ALKT, ALKTI, ALKT3, COLTR, CAUR, MGUR

Table 4 (Continued)

Group	Parameters included
DTF1	Toxicity Field Group 1 DO, CLIDUR, SSO4UR, SIO3UR, DOC, DIC, ALUT, ALNDCV, ALEXCV, FEUT, MNUT, PH, ALKTI, ALKT3, COLTR, COND25, CAUR, MGUR, KKUR, NAUR, FFIDUR
DTF2	Toxicity Field Group 2 CUUT, PBUT, ZNUT
DTL1	Toxicity Lab Group 1 HARDT, CAUR, MGUR, KKUR, NAUR, FFIDUR, CLIDUR, SSO4UR, SIO3UR, DIC, DOC, PH, ALKTI, ALKT3, COND25, COLTR, ALUT, ALNDCV, ALEXCV, CUUT, CDUT, FEUT, MNUT, NIUT, PBUT, ZNUT
DTL2	Toxicity Lab Group 2 DIC, PH, ALKTI, ALKT3, COND25, COLTR, ALUT, ALNDCV, ALEXCV
DTL3	Toxicity Lab Group 3 PH, ALKTI, ALKT3, ALUT, ALNDCV, ALEXCV
DTL4	Toxicity Lab Group 4 ALUT, ALNDCV, ALEXCV

Note: The routing of test groups and parameters varies according to project and sub-project. Check with your supervisor and P. Sutey to ensure correct routing.

Table 5. Parameter codes - routine Dorset site requests

Abbreviation	Description
ACDT	Mineral Acidity
ALKT	Total Fixed End Point Alkalinity to pH 4.5
ALKT3	" to pH 3.8
ALKTI	Total Inflection Point Alkalinity
ALEXCV	Catechol-Violet exchanged aluminum
ALNDCV	Catechol-Violet aluminum
ALUT	Total aluminum
CAUR	Calcium
CDUT	Cadmium
CHLRAC	Chlorophyll acid a
CHLRAT	Chlorophyll a
CHLRBT	Chlorophyll b
CLIDUR	Chloride
COLTR	True colour
COND25	Conductivity (at 25°C)
CUUT	Total copper
DO	Dissolved oxygen
DOC	Dissolved organic carbon
DIC	Dissolved inorganic carbon
FEUT	Iron
FFIDUR	Fluoride
KKUR	Potassium
MGUR	Magnesium
MNUT	Manganese
NAUR	Sodium
NIUT	Total Nickel
NNHTFR	Ammonium
NNOTFR	Nitrate + Nitrite
NNTKUR	Total Kjeldahl nitrogen
PBUT	Total lead
PH	pH
PPUT*	Total phosphorus
PPUT1	"
PPUT2	"
PPUT3	"
SIO3UR	Silicates as SiO_2
SSO4UR	Sulphate as SO_4
ZNUT	Total zinc

*Note: If two or three total phosphorous (PPUT) tests are required, ask for PPUT1 through 3 as needed. PPUT is reserved for individual results, or for the mean of replicates.

Table 6. Field data codes

Lakes and Lake Profiles:

Sample Depth - depth of sample, or depth of top of strata layer sampled (metres)

Water Depth - depth of station sample (i.e. maximum depth - metres)

Bottom Depth - depth of the bottom of the layer being sampled (metres)

Sample Type:
12 depth composite
11 grab sample
10 lake profile
01 quality control replicate

Condition Codes:

Sample condition codes (first 2 digits):
blank sample OK
1 litter in sample
2 pollen in sample
3 sediment disturbed
4 sample not filtered
5 wrong bottle type, see SDF for parameters affected
8 hydrogen sulphide odour
9 sample suspect, see Sample Description Field (use when none of the above apply)

Sampling method code (last digit, mandatory):
1 peristaltic pump
2 Van Dorn
3 Tube composite

Water layer:
1 whole lake composite
2 epilimnion
3 metalimnion
4 hypolimnion
5 euphotic zone
8 grab (for use with sample type 11)
9 general layer

Secchi Depth - (metres) include only with euphotic zone sample, water layer = 5. (Leave secchi depth blank for all other layers).

Streams:

Water Temp - observed temp (°C)
Max Temp - observed max. temp (°C) since previous sampling date
Min Temp - observed min. temp (°C) since previous sampling date

Sample Type:
11 grab sample (this is the default value, therefore it may be left blank)
01 quality control replicate

Table 6 (continued)

Condition Codes: Stream code organization will now be made consistent with lake and precipitation codes by the three digit field into an initial two digit field for up to two sample condition codes, and by using the third digit for hydrological condition codes (1-9). A non-zero third digit is mandatory for each sample. The codes are:

Sample condition code (first two digits):

blank	sample OK
1	litter in sample
2	pollen in sample
3	sediment disturbed/pool turbid
4	sample not filtered
5	wrong bottle type, see SDF for parameters affected
6	upstream disturbance, see SDF e.g. recent road grading, oiling or salting
7	iron deposits in stream
8	hydrogen sulphide odour
9	sample suspect, see Sample Description Field (use when none of the above apply)

Hydrological condition codes (last digit mandatory):

1	discharge OK
2	ice obstructing notch
3	debris obstructing notch
9	discharge suspect, see Sample Description Field (use when none of the above apply)

Precipitation:

Water depth - maximum measured depth to one decimal place

Gauge code (second decimal digit in depth):

0	SRG (standard rain gauge)
1	nipher gauge
3	Belfort gauge
9	no gauge, or gauge malfunction

Sample type:

61	wet only
62	bulk
63	on ground snow
01	quality control replicate

Condition code:

Sample condition codes (first two digits) are:

blank	sample OK
1	litter in sample
2	pollen in sample
3	bird feces in sample
4	sample overflow
5	depth estimated from volume or vica-versa;
6	snow and rain event
9	sample suspect, see Sample Description Field (use when none of the above apply)

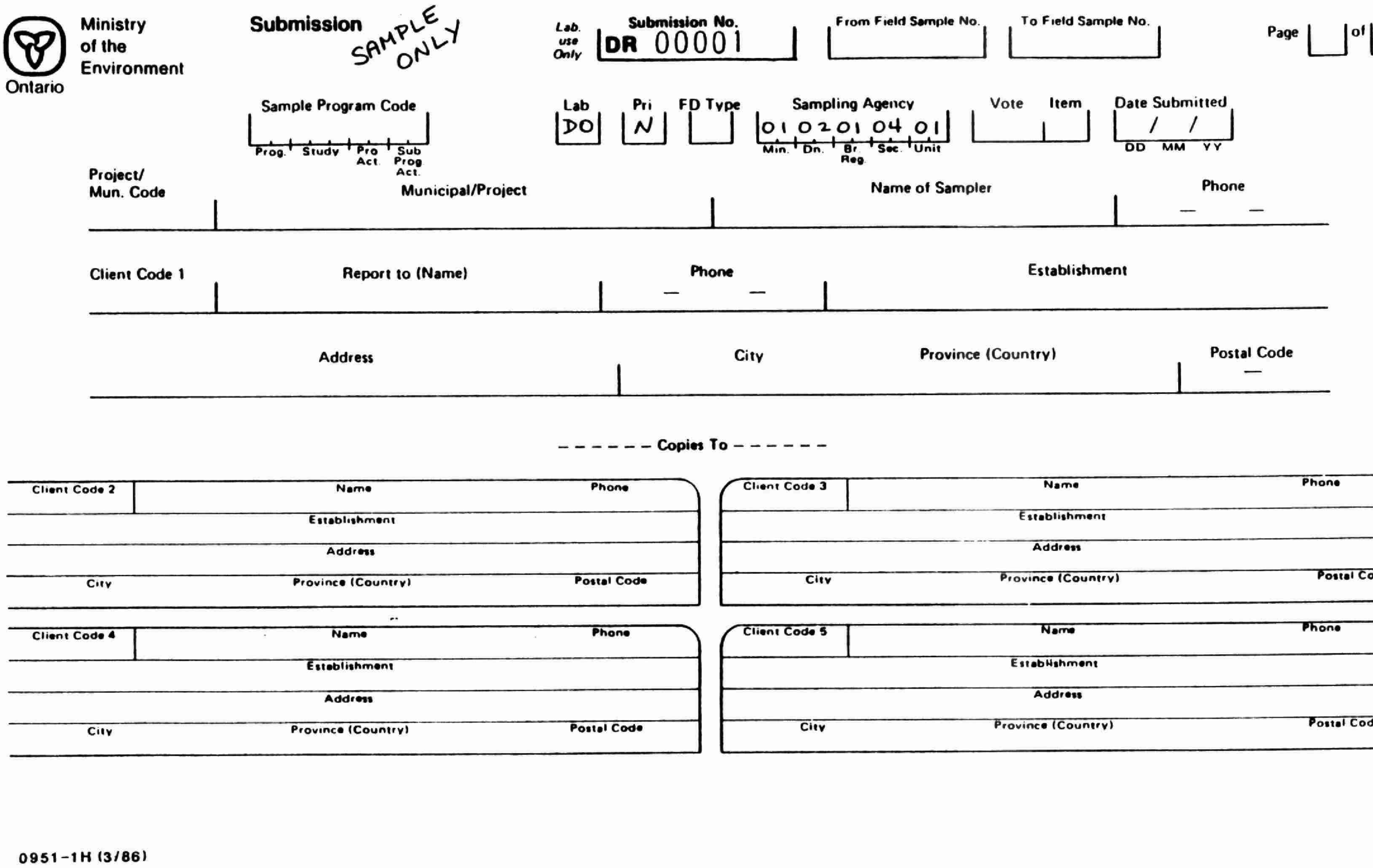
Table 6 (continued)

Precip. collector type (last digit mandatory):

1	bulk 2500 cm^2 square
2	Aerochem
3	MIC

Initial Date in year/month/day
Initial Time in 24-hour clock

Sample Volume in mL, right justified



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Submission SAMPLE ONLY

Lab. use Only **Submission No.** **DR** 00001

From Field Sample No.

To Field Sample No.

Page ☐ of ☐

Sample Program Code (Prog. | Study | Pro Act. | Sub Prog Act.)

Lab: DO

Pri: N

FD Type:

Sampling Agency: 01 02 01 04 01 (Min. | Dn. | Br. Reg. | Sec. | Unit)

Vote | Item

Date Submitted: / / (DD MM YY)

Project/ Mun. Code

Municipal/Project

Name of Sampler

Phone — —

Client Code 1

Report to (Name)

Phone — —

Establishment

Address

City

Province (Country)

Postal Code —

– – – – – – Copies To – – – – – –

Client Code 2 | Name | Phone
Establishment
Address
City | Province (Country) | Postal Code

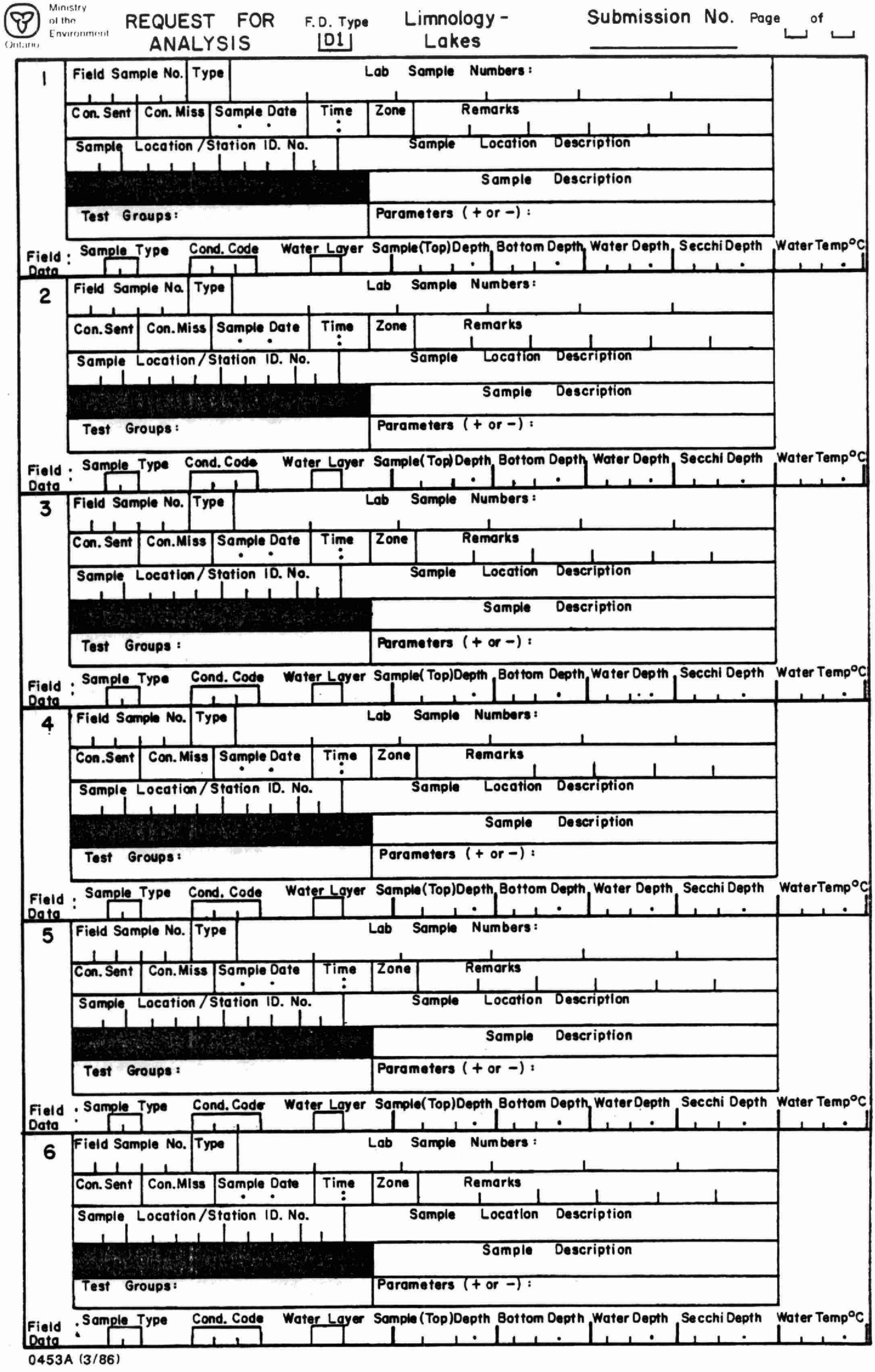
Client Code 3 | Name | Phone
Establishment
Address
City | Province (Country) | Postal Code

Client Code 4 | Name | Phone
Establishment
Address
City | Province (Country) | Postal Code

Client Code 5 | Name | Phone
Establishment
Address
City | Province (Country) | Postal Code

0951-1H (3/86)

Figure 1. Submission form



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Ontario

REQUEST FOR ANALYSIS

F. D. Type D1

Limnology - Lakes

Submission No. ____ Page ___ of ___

1
Field Sample No. | Type | Lab Sample Numbers:
Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks
Sample Location / Station ID. No. | Sample Location Description
Sample Description
Test Groups: | Parameters (+ or −) :
Field Data: Sample Type | Cond. Code | Water Layer | Sample (Top) Depth | Bottom Depth | Water Depth | Secchi Depth | Water Temp °C

2
Field Sample No. | Type | Lab Sample Numbers:
Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks
Sample Location / Station ID. No. | Sample Location Description
Sample Description
Test Groups: | Parameters (+ or −) :
Field Data: Sample Type | Cond. Code | Water Layer | Sample (Top) Depth | Bottom Depth | Water Depth | Secchi Depth | Water Temp °C

3
Field Sample No. | Type | Lab Sample Numbers:
Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks
Sample Location / Station ID. No. | Sample Location Description
Sample Description
Test Groups: | Parameters (+ or −) :
Field Data: Sample Type | Cond. Code | Water Layer | Sample (Top) Depth | Bottom Depth | Water Depth | Secchi Depth | Water Temp °C

4
Field Sample No. | Type | Lab Sample Numbers:
Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks
Sample Location / Station ID. No. | Sample Location Description
Sample Description
Test Groups: | Parameters (+ or −) :
Field Data: Sample Type | Cond. Code | Water Layer | Sample (Top) Depth | Bottom Depth | Water Depth | Secchi Depth | Water Temp °C

5
Field Sample No. | Type | Lab Sample Numbers:
Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks
Sample Location / Station ID. No. | Sample Location Description
Sample Description
Test Groups: | Parameters (+ or −) :
Field Data: Sample Type | Cond. Code | Water Layer | Sample (Top) Depth | Bottom Depth | Water Depth | Secchi Depth | Water Temp °C

6
Field Sample No. | Type | Lab Sample Numbers:
Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks
Sample Location / Station ID. No. | Sample Location Description
Sample Description
Test Groups: | Parameters (+ or −) :
Field Data: Sample Type | Cond. Code | Water Layer | Sample (Top) Depth | Bottom Depth | Water Depth | Secchi Depth | Water Temp °C

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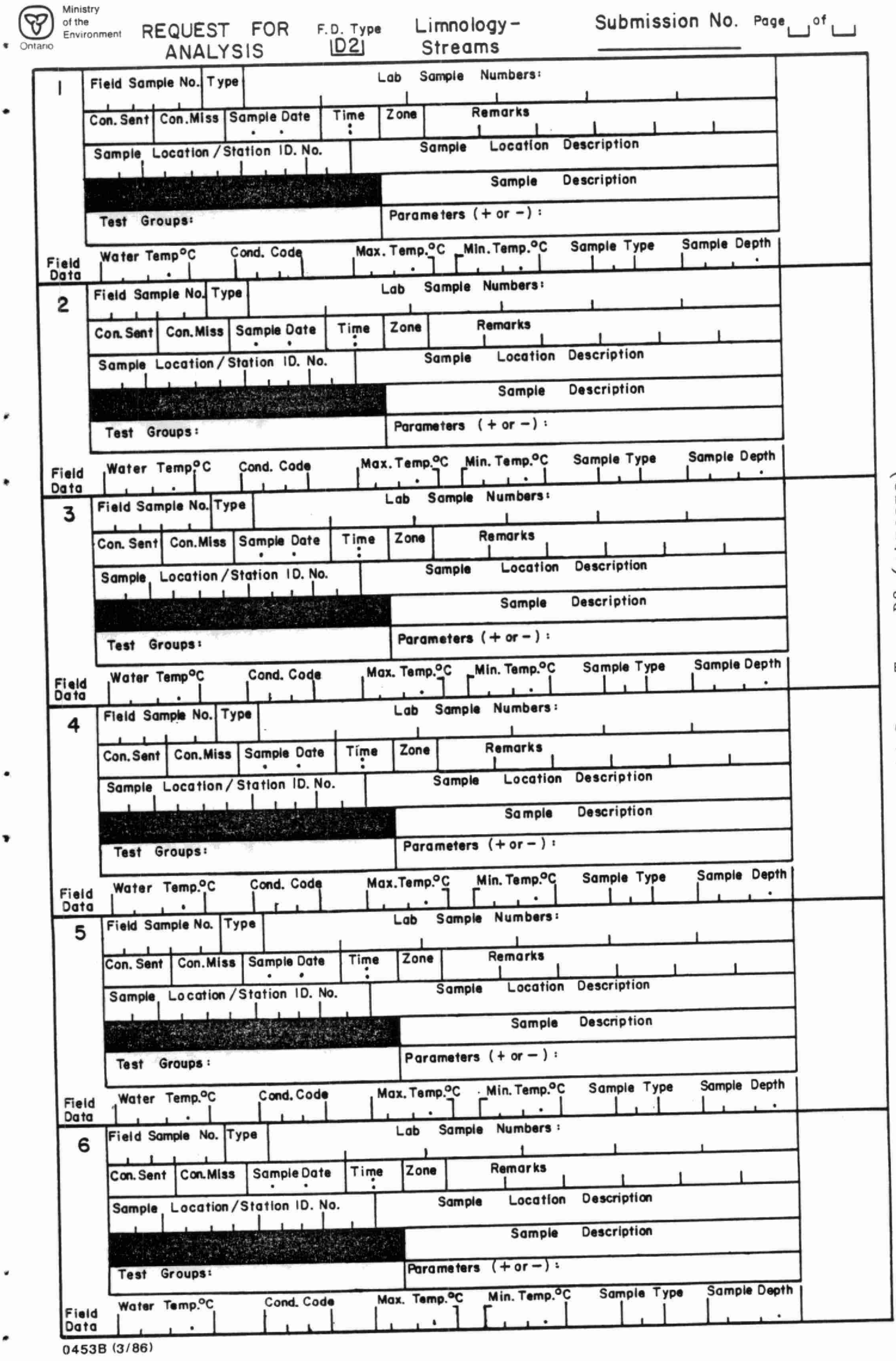
Figure 2. Request for Analysis Form, Field Data Type D1 (lakes)



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REQUEST FOR ANALYSIS

F.D. Type D2

Limnology - Streams

Submission No.

Page ☐ of ☐

1

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks

Sample Location / Station ID. No. | Sample Location Description

Sample Description

Test Groups: | Parameters (+ or −):

Field Data | Water Temp °C | Cond. Code | Max. Temp. °C | Min. Temp. °C | Sample Type | Sample Depth

2

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks

Sample Location / Station ID. No. | Sample Location Description

Sample Description

Test Groups: | Parameters (+ or −):

Field Data | Water Temp °C | Cond. Code | Max. Temp. °C | Min. Temp. °C | Sample Type | Sample Depth

3

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks

Sample Location / Station ID. No. | Sample Location Description

Sample Description

Test Groups: | Parameters (+ or −):

Field Data | Water Temp °C | Cond. Code | Max. Temp. °C | Min. Temp. °C | Sample Type | Sample Depth

4

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks

Sample Location / Station ID. No. | Sample Location Description

Sample Description

Test Groups: | Parameters (+ or −):

Field Data | Water Temp. °C | Cond. Code | Max. Temp. °C | Min. Temp. °C | Sample Type | Sample Depth

5

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks

Sample Location / Station ID. No. | Sample Location Description

Sample Description

Test Groups: | Parameters (+ or −):

Field Data | Water Temp. °C | Cond. Code | Max. Temp. °C | Min. Temp. °C | Sample Type | Sample Depth

6

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss | Sample Date | Time | Zone | Remarks

Sample Location / Station ID. No. | Sample Location Description

Sample Description

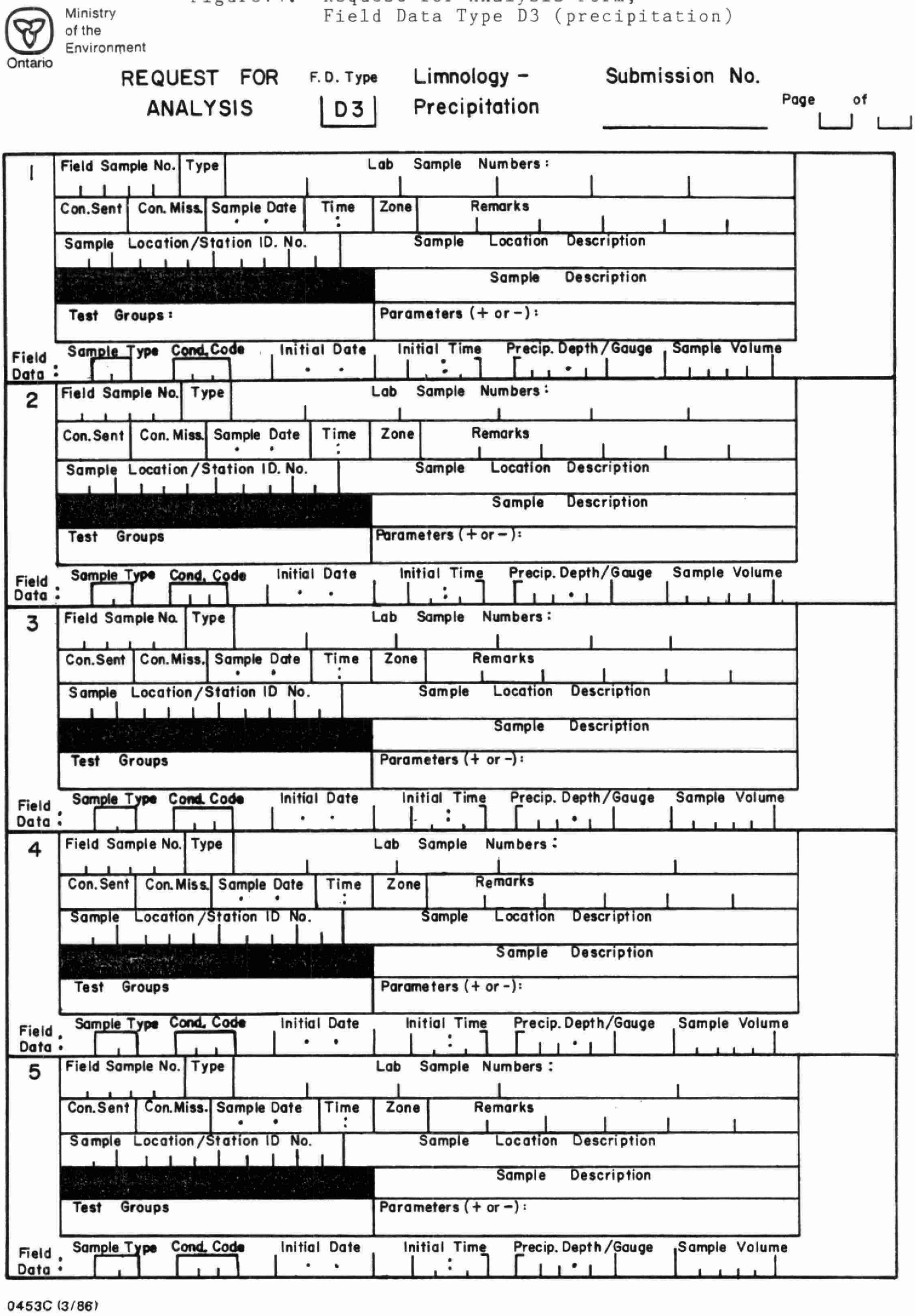
Test Groups: | Parameters (+ or −):

Field Data | Water Temp. °C | Cond. Code | Max. Temp. °C | Min. Temp. °C | Sample Type | Sample Depth

0453B (3/86)

Figure 3. Request for Analysis Form, Field Data Type D2 (streams)

Figure.4. Request for Analysis Form, Field Data Type D3 (precipitation)



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REQUEST FOR ANALYSIS

F.D. Type D3

Limnology - Precipitation

Submission No. ______

Page ☐ of ☐

1

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss. | Sample Date | Time | Zone | Remarks

Sample Location/Station ID. No. | Sample Location Description

Sample Description

Test Groups: | Parameters (+ or −):

Field Data: Sample Type | Cond. Code | Initial Date | Initial Time | Precip. Depth/Gauge | Sample Volume

2

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss. | Sample Date | Time | Zone | Remarks

Sample Location/Station ID. No. | Sample Location Description

Sample Description

Test Groups | Parameters (+ or −):

Field Data: Sample Type | Cond. Code | Initial Date | Initial Time | Precip. Depth/Gauge | Sample Volume

3

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss. | Sample Date | Time | Zone | Remarks

Sample Location/Station ID No. | Sample Location Description

Sample Description

Test Groups | Parameters (+ or −):

Field Data: Sample Type | Cond. Code | Initial Date | Initial Time | Precip. Depth/Gauge | Sample Volume

4

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss. | Sample Date | Time | Zone | Remarks

Sample Location/Station ID No. | Sample Location Description

Sample Description

Test Groups | Parameters (+ or −):

Field Data: Sample Type | Cond. Code | Initial Date | Initial Time | Precip. Depth/Gauge | Sample Volume

5

Field Sample No. | Type | Lab Sample Numbers:

Con. Sent | Con. Miss. | Sample Date | Time | Zone | Remarks

Sample Location/Station ID No. | Sample Location Description

Sample Description

Test Groups | Parameters (+ or −):

Field Data: Sample Type | Cond. Code | Initial Date | Initial Time | Precip. Depth/Gauge | Sample Volume

0453C (3/86)

Figure 5. Request for Analysis Form, Field Data Type D4 (lake profiles)

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REQUEST FOR ANALYSIS submission no. ____________ page __ of __

LAKE PROFILE Field Data Type: D4

lab sample type	--date--	-time	----station number----	sample description	water depth (in field data of 1st sample only)
__	__/__/__	__:__	__ ___ ___ __	______________	___._

PROFILE SAMPLE DATA:

sample number	lab numbers	cont. sent	tests	sample depth	cond code	samp. type	temp.	light 'D'	light 'R'	light 'U'
1	___-___	_	________	___._	__	__	___._	____._	____._	_.___
2	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
3	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
4	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
5	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
6	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
7	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
8	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
9	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
10	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
11	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
12	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
13	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
14	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
15	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
16	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
17	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
18	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
19	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
20	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
21	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
22	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
23	___-___	_	________	___._	__"	_	___._	___._	___._	_.___
24	___-___	_	________	___._	__"	_	___._	___._	___._	_.___

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